BISS Biodiversity Information Science and Standards

Biodiversity Information Science and Standards 3: e36002
doi: 10.3897/biss.3.36002

OPEN ACCESS

Conference Abstract

Mission: Implausible — Revealing rogue marine species in records across biodiversity data platforms

Claude Nozères[‡], Mary Kennedy[§]

‡ Canadian Register of Marine Species, Mont-Joli, Canada
§ iNaturalist Canada, Dartmouth, Canada

Corresponding author: Claude Nozères (claudenozeres@gmail.com)

Received: 08 May 2019 | Published: 18 Jun 2019

Citation: Nozères C, Kennedy M (2019) Mission: Implausible — Revealing rogue marine species in records across biodiversity data platforms. Biodiversity Information Science and Standards 3: e36002.
https://doi.org/10.3897/biss.3.36002

Abstract

Online biodiversity platforms publish datasets with graphic tools to help with quality control of submitted records, but more could be done to make the data robust for ecological analyses. Attention has focused mostly on automating tools for obvious errors, including misspelled names and synonyms, dates, or coordinates. However, a manual review of species identifications and distributions may uncover improbable records, such as a species reported in an area far from its usual range, or a rare species found in an area that has many more records of a related species. Examples are shown by constructing checklists in the Northwest Atlantic, using information from the World Register of Marine Species (WoRMS, http://www.marinespecies.org) and the Ocean Biogeographic Information System (OBIS, https://obis.org). Reviewing rare species records revealed some misidentifications, but in other instances, the rare species was valid while it was the commonly reported species that needed correction. Confirmations were obtained by comparing records from different regions, but also across platforms, including photos from observers on iNaturalist Canada (https://inaturalist.ca), genetic analyses on Barcode of Life Data systems (BOLD, http://www.boldsystems.org), and literature in the Biodiversity Heritage Library (BHL, https://www.biodiversitylibrary.org). While this exercise succeeded in validating the marine taxa of a region, it is an obvious candidate for automation in three

© Nozères C, Kennedy M. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

areas: 1) flagging records of improbable taxa in a region, 2) comparing records with different types of information (e.g., specimen photos, genetic groupings, or literature records), and 3) updating users and providers when records get flagged as unusual or are modified. The first approach could be explored using online graphics tools or R software packages (rOpenSci, https://ropensci.org). The second toolset, comparing records across platforms, is partially realized with some linkages already operating between WoRMS, OBIS, BOLD, BHL, iNaturalist, and the Global Biodiversity Information Facility (GBIF, https://www.gbif.org). The third target will be the most difficult to implement, requiring reliable platform cross-linkages and specimen record identifiers to send notifications of changed status of records to both users and the original data source. Ongoing work is discussed on communicating the need to review records across platforms, with the hope that toolsets will be developed to make this task easier.

Keywords

data mobilization, marine biodiversity, taxonomic diversity

Presenting author

Claude Nozères

Presented at

Biodiversity_Next 2019